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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/566,496

01/31/2006

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GRNO-05U1

3542

59538 7590 10/15/2009  
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EXAMINER

VOGEL, NANCY TREPTOW

ART UNIT

PAPER NUMBER

1636

MAIL DATE

DELIVERY MODE

10/15/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                      |  |
|------------------------------|--------------------------------------|--------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/566,496 | <b>Applicant(s)</b><br>GORR, GILBERT |  |
|                              | <b>Examiner</b><br>NANCY VOGEL       | <b>Art Unit</b><br>1636              |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 19-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 19-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/17/09</u> .   | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

Claims 1-8, 19-26 are pending in the case.

Any rejection of record in the previous action not addressed in this office action is withdrawn.

The following is a new rejection:

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-8 and 19-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 19 and by dependence claims 2-8 and claims 20-26 are vague and indefinite in the recitation of "said first and said second recombination sequences are different and form a complementary set of recombination sequences enabling said constructs to recombine with each other". It is not clear in what sense the recombination sequences are intended to be "complementary to each other". In molecular biology complementarity is a property of double-stranded nucleic acids such as DNA and RNA as well as DNA:RNA complexes. Each strand is complementary to the other in that the base pairs between them are connected via two or three hydrogen bonds. Since there is only one complementary base for any of the bases found in DNA

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and in RNA, one can reconstruct a complementary strand for any single strand.

Therefore, it is not clear what is meant by two regions of double stranded DNA being complementary as recited in the claims. Furthermore, it is unclear what is intended by the phrase “a second recombination sequence in the same orientation as the first” and “said first recombination sequence in the same orientation as the second” in claims 1 and 19.

The following is a new rejection:

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 19 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Perkins et al. (US 2006/0035269).

Perkins et al. disclose a set of vectors comprising a first heterologous nucleic acid construct comprising a heterologous nucleotide sequence operably linked to a

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promoter, flanked at the 5' end by a first recombination sequence and at the 3' end by a second recombination sequence, and a second heterologous nucleic acid construct comprising a heterologous nucleotide sequence operably linked to a promoter, flanked at the 5' end by said second recombination sequence, and at the 3' end by said first recombination sequence. It is considered that Fig. 2C shows a vector comprising a first a second recombination sequence (attP and loxP, or any DNA sequence which is between the coding regions of the cam and Kan genes). It is considered that the composition comprising more than one of the molecules of pEYC726 comprises a vector comprising a gene, which is cam, having attP at the 5' end, and loxP at the 3' end. Another molecule of said pEYC726 comprises a gene, which is kan, having loxP at the 5' end and attP at the 3' end. Therefore, at least 2 molecules of said pEYC726 constitute a "set" of vectors which anticipate the elements of the claim. It is further considered that amongst the composition comprising this vector, at least 2 of the molecules would be present in linear form.

The following is a new rejection:

Claims 1-8, 19-22, 24, 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Zeidler et al. (J. Plant Physiol., 154, p. 641-650, 1999)(cited by applicants).

Zeidler et al. discloses a method in a moss plant cell comprising providing a heterologous nucleic acid construct comprising at least one heterologous sequence linked to a promoter, flanked by a 5' first recombination sequence and a 3' second recombination sequence, and a heterologous nucleic acid construct comprising at least

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one heterologous sequence linked to a promoter, flanked by a 5' recombination sequence which is the same as the second recombination sequence, and a 3' recombination sequence which is the same as the first recombination sequence, and transforming the moss plant cell with said the two heterologous nucleic acid constructs. It is noted that the construct shown in Fig. 6 C, for example, comprises at least two heterologous sequences linked to promoters, in the same orientation, flanked by a 5' and a 3' recombination sequence. Since at least 2 such plasmid are present in transformants in some cases, the claim limitations are met.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 23 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zeidler et al. as applied to claims 1-8, 19-22, 24, 25 above, and further in view of Schaefer (Annu. Rev. Plant Biol. 2002, 53:477-501) (both cited by applicants). Zeidler et al is cited essentially for the reasons set forth above. The difference between the reference and the instant claims is that the moss that is transformed is the *Physcomitrella patens*. However, Schaefer discloses transformation of the moss *Physcomitrella patens* with heterologous nucleic acid plasmid ( see 481-484). It would have been obvious to one of ordinary skill in the art to have transformed *P. patens*, with

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the plasmid disclosed by Zeidler et al., since it was known in the art that *P. patens* is easily transformed with foreign DNA, as disclosed by Schaefer, and since Schaefer additionally discloses the desirability of said *P. patens* for functional genomic studies. Based upon the teachings of the cited references, the high skill of one of ordinary skill in the art, and absent evidence to the contrary, there would have been a reasonable expectation of success to result in the claimed invention.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NANCY VOGEL whose telephone number is (571)272-0780. The examiner can normally be reached on 7:00 - 3:30, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Low can be reached on (571) 272-0951. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/NANCY VOGEL/  
Primary Examiner, Art Unit 1636

NV  
10/9/09